MagIC Net

Intelligent Software for Ion Chromatography

Metrohm means… Spectroscopy!

Ω Metrohm

MagIC Net – the software for modern Ion Chromatography

MagIC Net is the user-friendly software for ion chromatography. MagIC Net controls the components of the intelligent Metrohm ion chromatography systems as well as their peripheral devices for Liquid Handling and automation. All IC instruments can be controlled by MagIC Net rising from Eco to the microbore IC systems or combustion IC. MagIC Net collects all relevant information generated by the

system and offers the convenience of modern data management along with the ability to produce customized reports. Clear symbols, well-arranged layout and intuitive operation are the key features of MagIC Net.

MagIC Net monitors the entire ion chromatography system and automatically controls measured results.

As the software's user interface can be customized to meet the requirements of individual users, MagIC Net makes ion chromatography perfectly easy. MagIC Net is available in many language versions, including Chinese, German, English, French, Italian, Japanese, Korean, Polish, Portuguese, Russian and Spanish.

THE ADVANTAGES OF MAGIC NET

- Intelligent ion chromatography
- Simple and intuitive operation
- Freely configurable user interface thanks to layout management
- Great flexibility in configuration and programming
- Modern data management
- Powerful report generator
- Comprehensive monitoring and control functions
- Full traceability of all data
- Client-server software
- Meets all FDA and GLP requirements
- Available in major languages

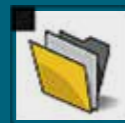# MagIC Net – five main areas provide an overview

WORKPLACE

- Platform for starting single determinations and determination series
- Calibration of the IC system
- Parallel operation of up to 4 workplaces
- Real-time presentation of chromatograms and their possible reference chromatograms
- Real-time display of system parameters
- Visualization of the method sequence
- Display of determination reports
- Management of sample tables
- Automatic system startup via timer

DATABASE

- Interface for data management, reprocessing and reporting
- Comprehensive search and filter functions
- Output of results and calibrations
- Result display in control charts
- Information concerning determinations
- Export and import functions
- Automatic and manual backup function
- Up to 4 databases can be opened simultaneously
- Data organization within the database using batches

METHOD

- Method development
- Definition of analysis conditions to be applied
- Setting up time programs
- Definition of analytes and their evaluation parameters
- Predefined method templates for easy method generation
- Example methods that are supplied with the installation can be imported and then used

CONFIGURATION

- Administration of instruments, columns, solutions, and accessory parts
- Configuration of all non-method-specific settings
- Definition of service intervals, expiry dates, control limits, and GLP test intervals
- User administration
- Security settings
- Audit trail

MANUAL CONTROL

- User interface for manual control of the IC system
- Direct operation of all connected hardware components
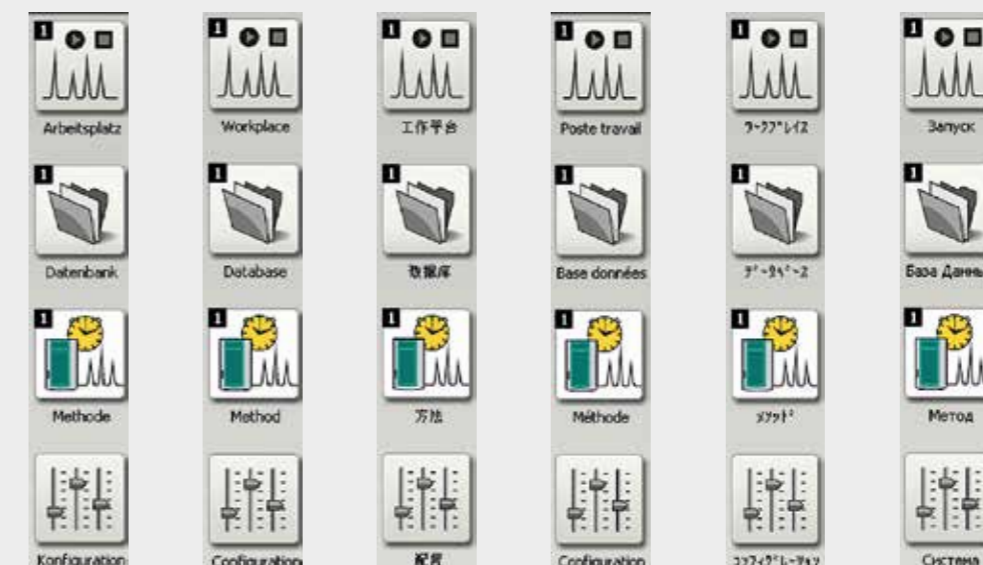- Display of currently used system parameters

MagIC Net means simple and intuitive operation

Ease of use is a property of all good software. MagIC Net sets good standards in terms of usability featuring the same Look and Feel as other software solutions from the Metrohm portfolio.

The user interface of MagIC Net is freely configurable. It can therefore be adapted entirely to the requirements of the individual user. Only the windows that are actually needed are opened, depending on the settings of the user. The content of the individual windows can also be freely defined by the user. Only relevant parameters are displayed. User interfaces overloaded with information are therefore a thing of the past.

Intuitive operation of MagIC Net is enabled by the clearly arranged user interface and the self-explanatory symbols. The software automatically recognizes all connected devices and lists them in the configuration table. This also applies to the individual hardware components such as columns, detectors, and dosing units.

All system components are **directly accessible** in the software. Setting up of time programs is perfectly easy. Monitoring and control functions minimize operating errors. MagIC Net is available in numerous languages, making sure that users benefit from the software's full potential. MagIC Net is currently available in many different languages.*

*No language barriers: MagIC Net is available in German, English, Bulgarian, Chinese, Czech, French, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Slovak, Spanish and traditional Chinese.

Smart solutions for better reliability of results

Smart assistance

MagIC Net enhances user convenience, minimizes the risk of operating errors and can relieve users of many responsibilities by making logical decisions and carrying them out. Warning messages help prevent errors; the system tells you when maintenance of components is due, and control functions check any results automatically.

If your Metrohm ion chromatograph is connected to MagIC Net via the USB interface, the software automatically recognizes the connected instrument plus any peripheral devices such as autosamplers, eluent production modules, stand-alone detectors, etc. «Plug & play – ready to start» is the principle. The connected devices are clearly displayed in a table together with their function parameters, where they can be configured with just a few mouse clicks.

Intelligent hardware components

The individual components of your Metrohm ion chromatograph such as separation columns, pumps, detectors, etc. are also incorporated in the software. They come with a small memory chip for this purpose. E.g., column-specific data such as serial numbers, maximum permissible flow rates, maximum permissible pressure, etc. are stored on the chip of the separation column. Current operating parameters

such as the number of determinations already carried out are automatically saved on this chip as well. All of this data can be read out at any time and transferred directly into the method. The following intelligent hardware components are integrated in MagIC Net:
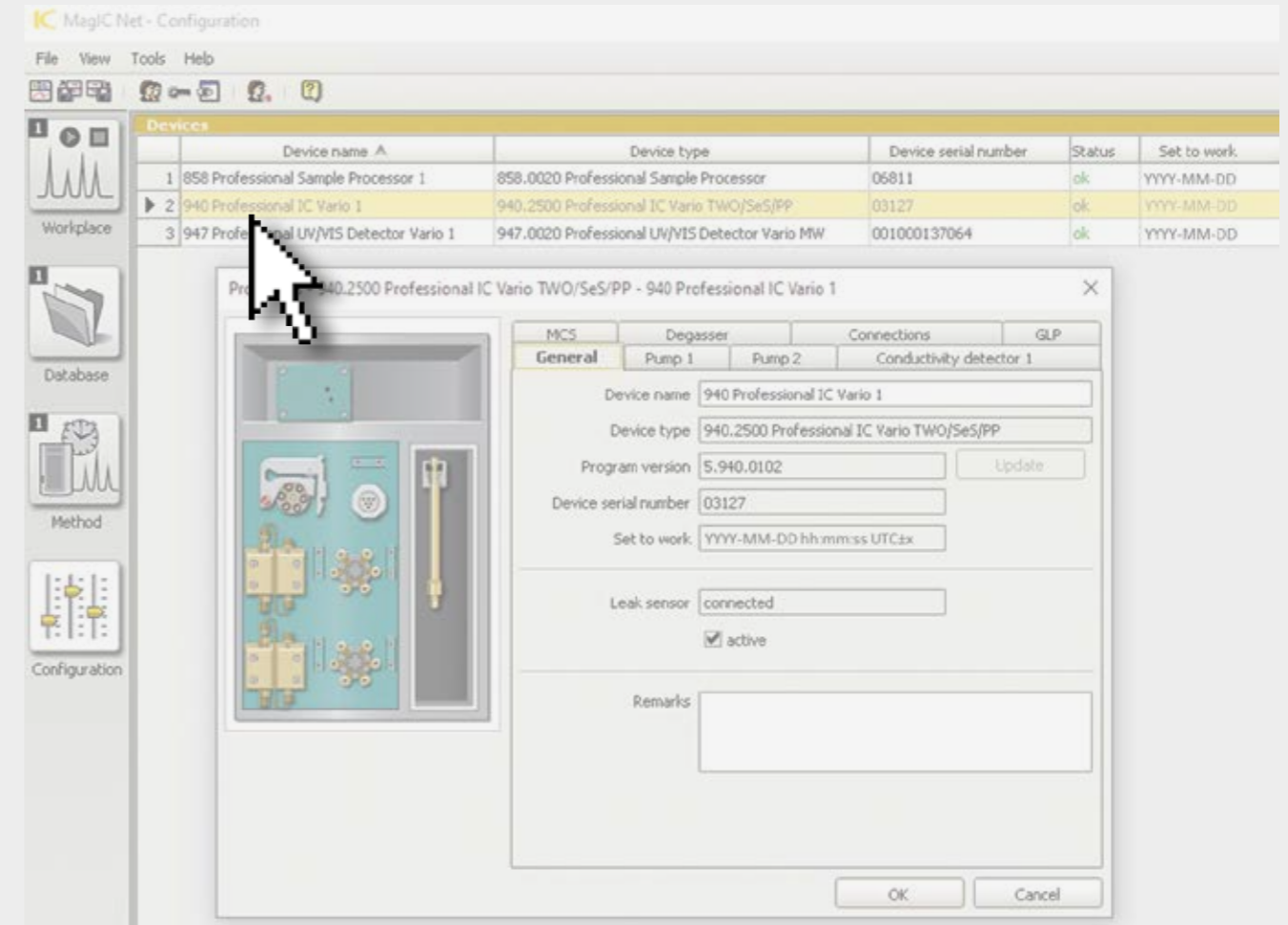
– iPump – intelligent high-pressure pump
– iColumn – intelligent analytical separating column
– iDetector – intelligent conductivity detector
– Intelligent dosing units
– iCell – intelligent amperometric cells
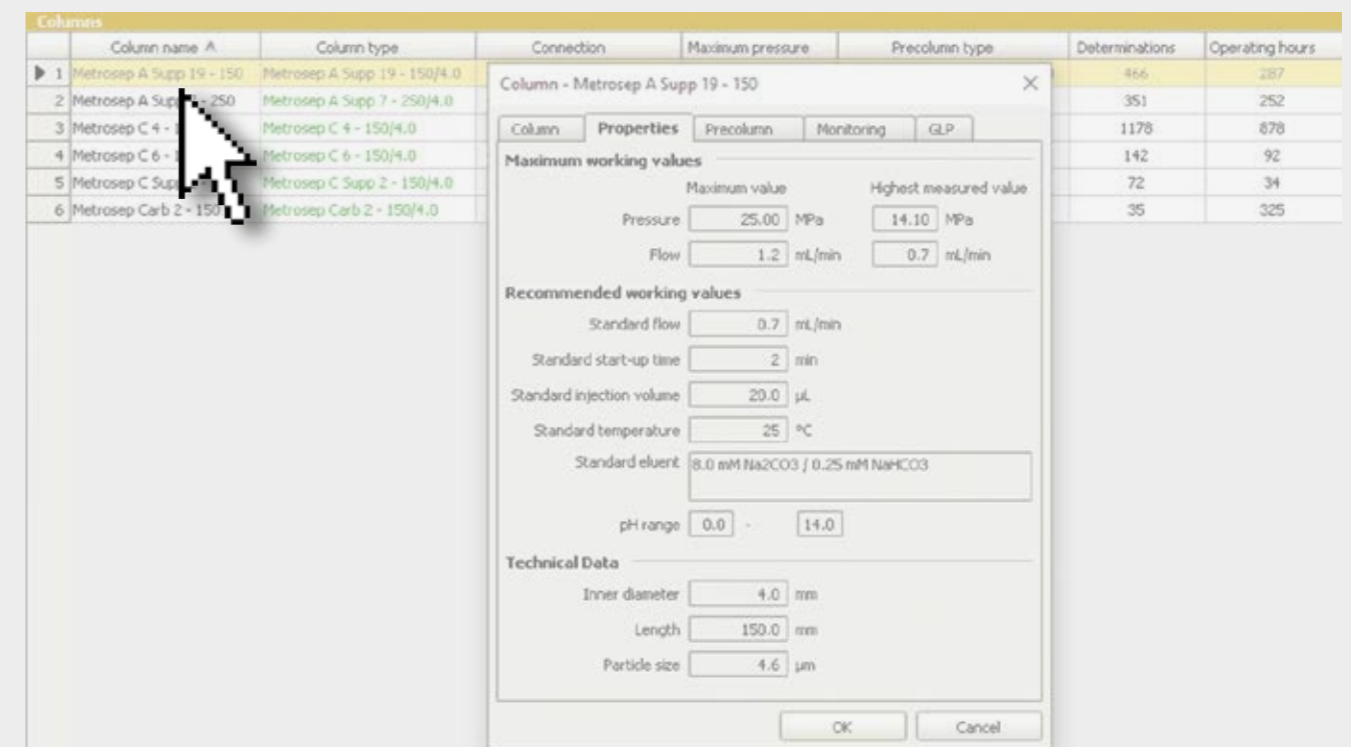– iReactor – intelligent post-column reactor

Logical decisions

MagIC Net is able to make logical decisions and thus to increase the reliability of results. Functions such as common variables, conditions, subprograms and case decisions are used for this purpose. One example of the use of these functions is logical dilution of a sample. When this is carried out, the unknown sample is measured, the result is compared with the one from the highest calibration standard, the factor for the dilution that is needed is calculated and the dilution is carried out fully automatically. MagIC Net thus ensures that results are always within the calibration limits.

Automatic data transfer:
The iColumn technology allows data to be read and written directly on the column.

Easy system configuration: Once MagIC Net has recognized the connected instruments, you have direct access to the parameters of the individual instruments and hardware components.

Just one click: The properties and standard working conditions of the column being used can be called up by a single mouse click.
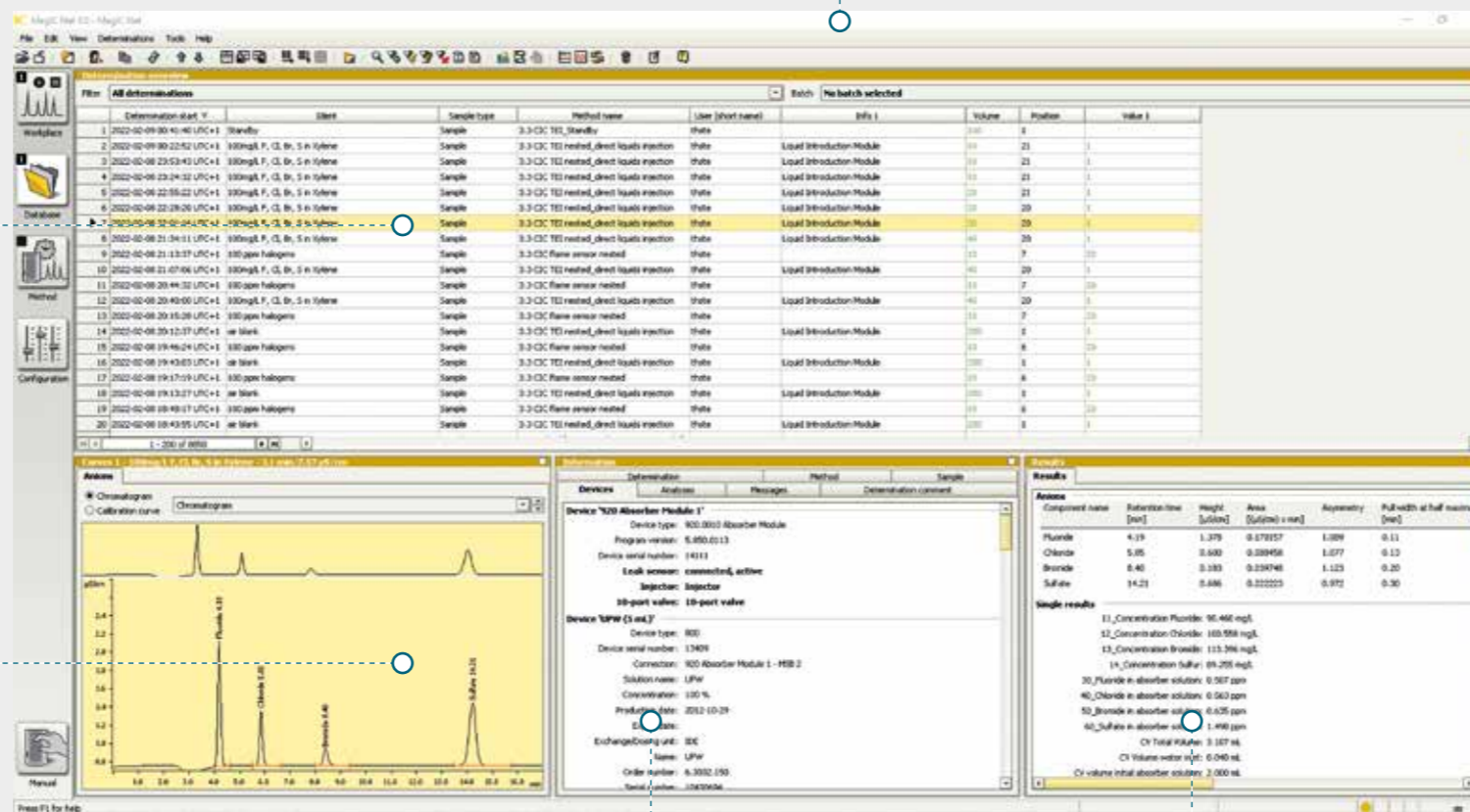
Convenient data management

The data management of MagIC Net is based on a powerful database. Each determination is stored in this database, and is then available with all settings, the method that was used, and any user information. The layout of the displayed information can be configured according to the user needs.

Batch

Organize your data with the help of batches. They can be defined already in the sample determination series.

Quick availability of results

If you wish to forward a measuring result to a colleague without delay, you can dispatch the relevant determination directly from the database by e-mail – without tedious intermediate saving.

Convenient data management

Your sample and measuring data is managed in the freely configurable determination overview. This is where the most important information for each sample is displayed. Assistance is provided by a comprehensive range of search and filter functions.

Curve for every determination

Chromatograms, calibration curves, and spectra are all displayed in the «Curves» window. Various zoom functions facilitate the evaluation of details. The display and labeling of the chromatogram are freely selectable.

Full traceability of results

Who carried out a determination when? Which devices were used? The «Information» window documents all of the determination-relevant settings, used devices, sample-specific details and changes.
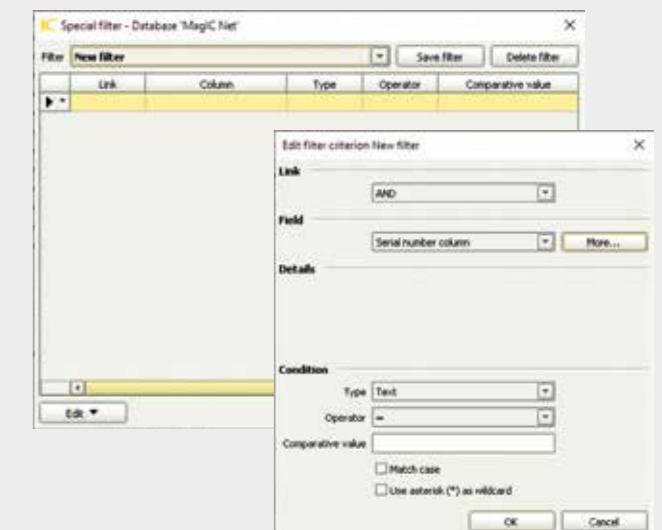
Immediately recognize what is important

The «Results» window provides a quick overview. All of the important results, user-defined results, and statistics are displayed here in compact form. Results out of the defined specifications can be monitored and are highlighted in red. You determine which parameters are displayed.

Search and filter functions

Even the search for determinations that have been carried out on a column with a specific serial number is no problem for MagIC Net. The determinations you are looking for can be located retrieved among hundreds of analyses.
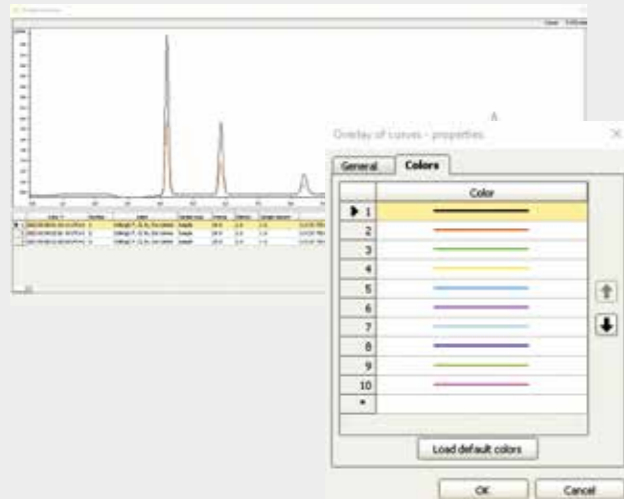
Convenient data management ...

... and flexible reporting
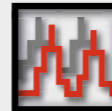
REPROCESSING DETERMINATIONS

Should it be necessary to reprocess any determination, this is carried out using the reprocessing function in the database. Not only peak integration and identification, calibrations, and result calculations, but also sample data can be revised at any time. This can be recapitulated whenever needed using the «History» function. The original version can also be restored at any time.
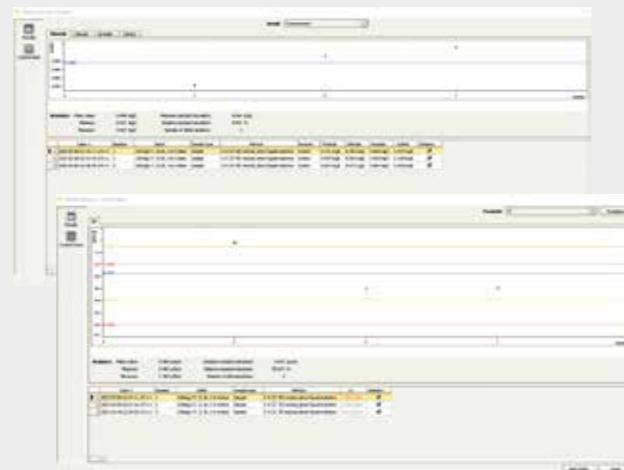
OVERLAYING CURVES

The «Overlay curves» function enables a quick and easy visual comparison of chromatograms. The colors can be freely defined in order to provide a better overview.

RESULT OVERVIEW WITH CONTROL CHART FUNCTION

At the push of a button you receive an over-view of your results, including a statistical evaluation. Print this out, generate a pdf document or insert it directly into another application such as Office using Copy and Paste. You can also define control charts with warning and intervention limits. If a value is outside the defined range, this is visible at a glance.
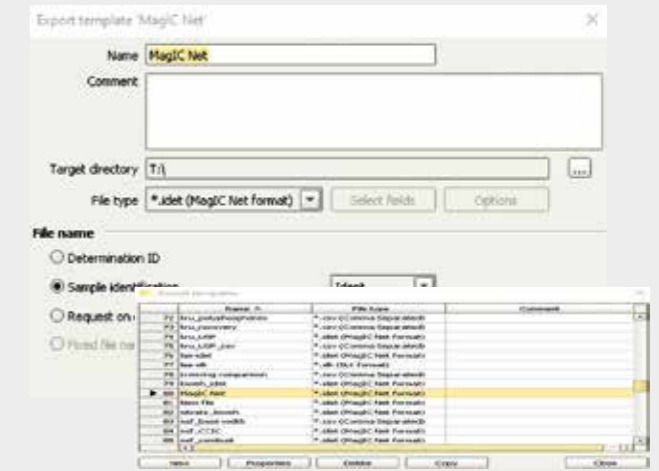
DATA EXPORT

If you wish to process your data in Excel or export it to your LIMS, many different export formats are available: CSV, XML, SLK, AIA, MagIC Net format or measuring point lists in TXT format.

The format of MagIC Net contains all of the information about the determinations and can be used for exchanges between multiple MagIC Net applications, as well as for support purposes.

Flexible reporting

A powerful report generator allows the user to create customer-specific report templates in which even graphs or corporate logos can be incorporated. The many layout options allow user to design customized reports. Alternatively, you can simply adapt one of the report templates provided to meet your requirements. To print an analysis report, simply highlight the respective determination in the database, select a report template, and press «OK». In addition, an automatic printout can also be triggered immediately after the determination if this has been defined in the relevant method. The results can even be sent automatically by e-mail.

Flexibility allows customized solutions

Regardless of whether you are an expert and use the full functionality of MagIC Net in method development, whether MagIC Net is operated by users with basic knowledge in a contract laboratory or whether the software is used by semi-skilled personnel in a factory to monitor production using a routine application – MagIC Net provides the necessary flexibility.

See only what is required
The freely configurable MagIC Net user interface can be adapted without restriction to the needs of the respective users. If required, only the windows that are actually needed are opened; the information that they contain can be freely defined.
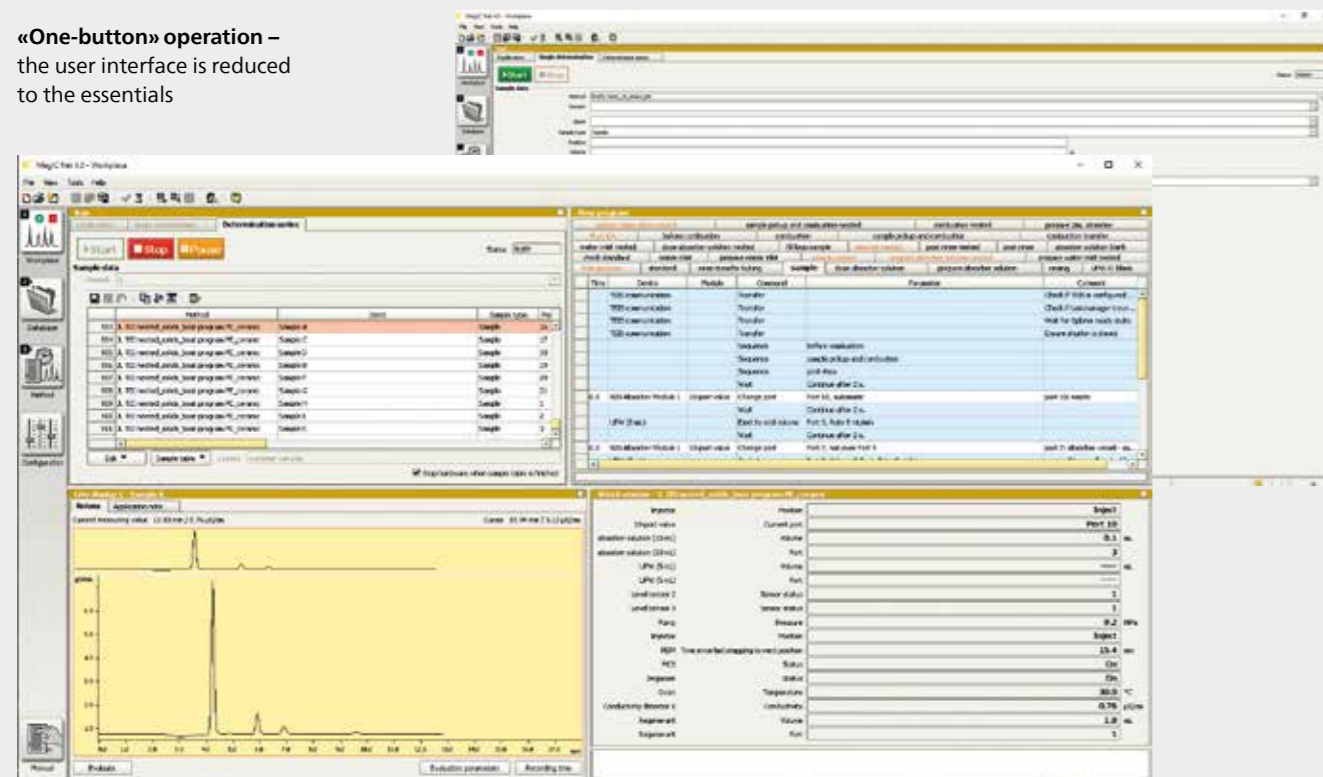
User-specific user interfaces
The user interface settings can be saved in a user-specific way. This means that, for one user, MagIC Net can be reduced to «one-button operation» to permit only the starting and stopping of determinations, while, for another user, the user interface can be designed to make all method programming, configuration, and operating options available to that user.
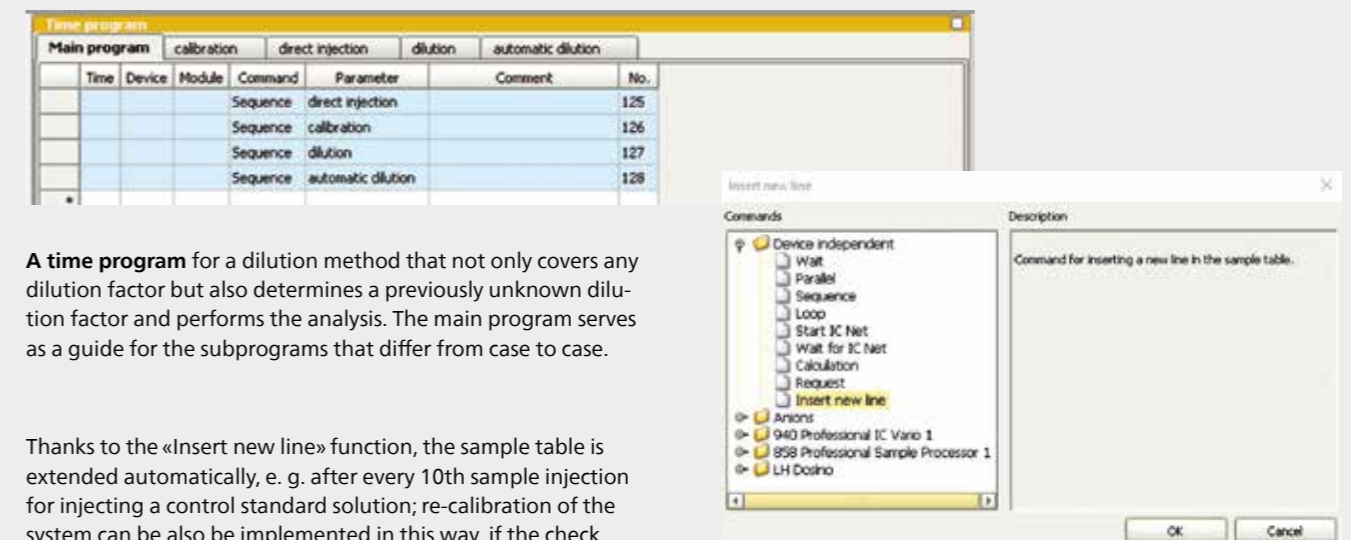
Flexibility in everyday laboratory work
You would like to process all samples using the same analysis method? Thanks to the flexibility of the method programming, this is no problem with MagIC Net. Regardless of whether dilution takes place with a factor of 1:10, 1:20 or 1:50 – one method with one calibration is sufficient. The flexibility is in the time program of the method. This is where the analysis sequence can be defined step by step. Even complex work sequences can be processed using one and the same method with the additional options of the subprograms (parallel or sequentially running), the case decisions, the conditions, and the loops. A single calibration is enough for this.

Moreover, the time program makes it possible to prepare the next sample while data recording of the previous sample is still in progress. This saves time and increases sample throughput. Do you want to inject a check standard solution automatically after every 10th injection? This is also no problem for MagIC Net. Thanks to the «Insert new line» function in the time program, the sample table is automatically adapted accordingly. The flexibility of MagIC Net is also evident in the evaluation of the chromatograms. Since the powerful evaluation mechanism is also available during a determination, detected peaks can be evaluated even while the chromatogram is still in progress.

«One-button» operation – the user interface is reduced to the essentials

Be it single determinations or determination series – the user interface can be designed such that only sample-specific entries are possible. This also makes it possible for personnel from other fields to operate the analysis system. For routine applications, the time program, the watch window (a display of the current device parameters), and the live display of the chromatogram are used together with the run window.

A time program for a dilution method that not only covers any dilution factor but also determines a previously unknown dilution factor and performs the analysis. The main program serves as a guide for the subprograms that differ from case to case.

Thanks to the «Insert new line» function, the sample table is extended automatically, e. g. after every 10th sample injection for injecting a control standard solution; re-calibration of the system can be also be implemented in this way, if the check standard solution is outside the defined limits.
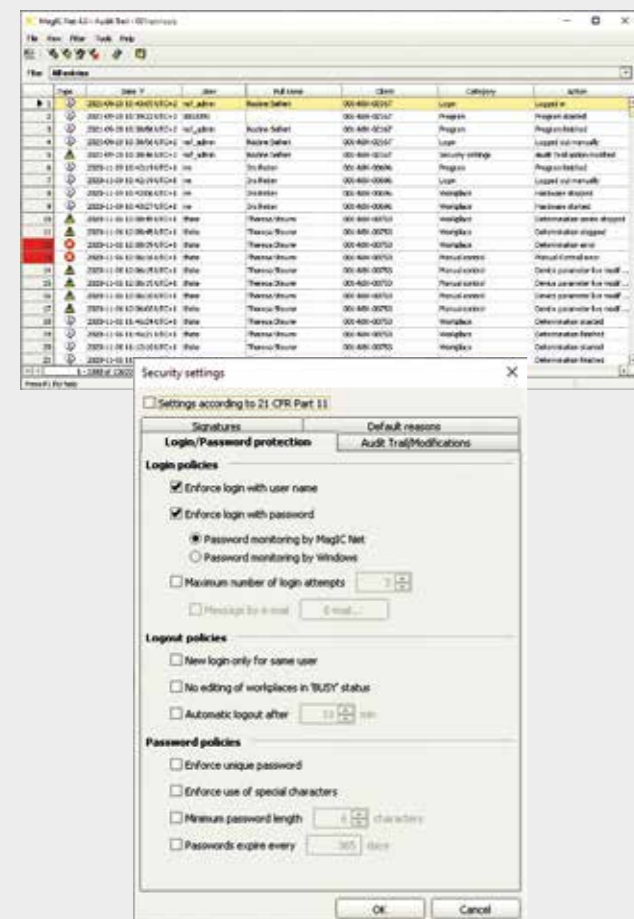

The entire subprogram for logical dilution. It allows a sample to be diluted using a dilution factor that has been calculated previously by the system. This means the results are always within the calibration range.

Protect your data with the comprehensive security functions of MagIC Net

MagIC Net provides many options for protecting methods and data from unauthorized access. Manipulations are excluded. The GLP and FDA data security requirements are fully met by MagIC Net. MagIC Net ensures all data to have the qualities stipulated by ALCOA and ALCOA+. MagIC Net guarantees the traceability of all results. This is based on

the «History» function, which uses a version control to make all changes to methods and determinations accessible again via a version check. In this way, the user, instrument, column, eluent, integration, and also calibration can be tracked from raw data to the last revision. Previously revised methods and determinations can also be reactivated.

Client-server solutions – a matter of course with MagIC Net Multi

MagIC Net Multi enables central data management using a client-server option. Even if you set up MagIC Net as a local version first, the software can be upgraded to a client-server system at any time should your requirements increase. If MagIC Net is installed on a server, all measuring and office computers operate as clients. All determinations and methods are stored centrally and are available to every client PC at any time. All results can be viewed and processed further from any PC.

Data security
MagIC Net assists you with data backups. If you activate the automatic backup function, MagIC Net automatically creates full copies of all determinations and configurations. This means that all settings, system configurations, and determinations can be quickly recovered.

The central user administration makes it possible to activate users and assign rights of access for the entire MagIC Net system.

ADVANTAGES OF THE DATA SECURITY FUNCTIONS

- Password protection under MagIC Net and Microsoft Windows
- Central user administration with individual setting of user rights
- Global GLP and FDA settings
- Automatic backups of databases and configurations
- Traceability based on documentation of all method and determination modifications
- Traceability of all actions in the system by complete audit trail
- Digital signature at two levels
- Compliance with the Data Integrity Guidelines
- Separate signature for methods and determinations
- Meets ALCOA and ALCOA+
- Let MagIC Net or Windows monitor the passwords.
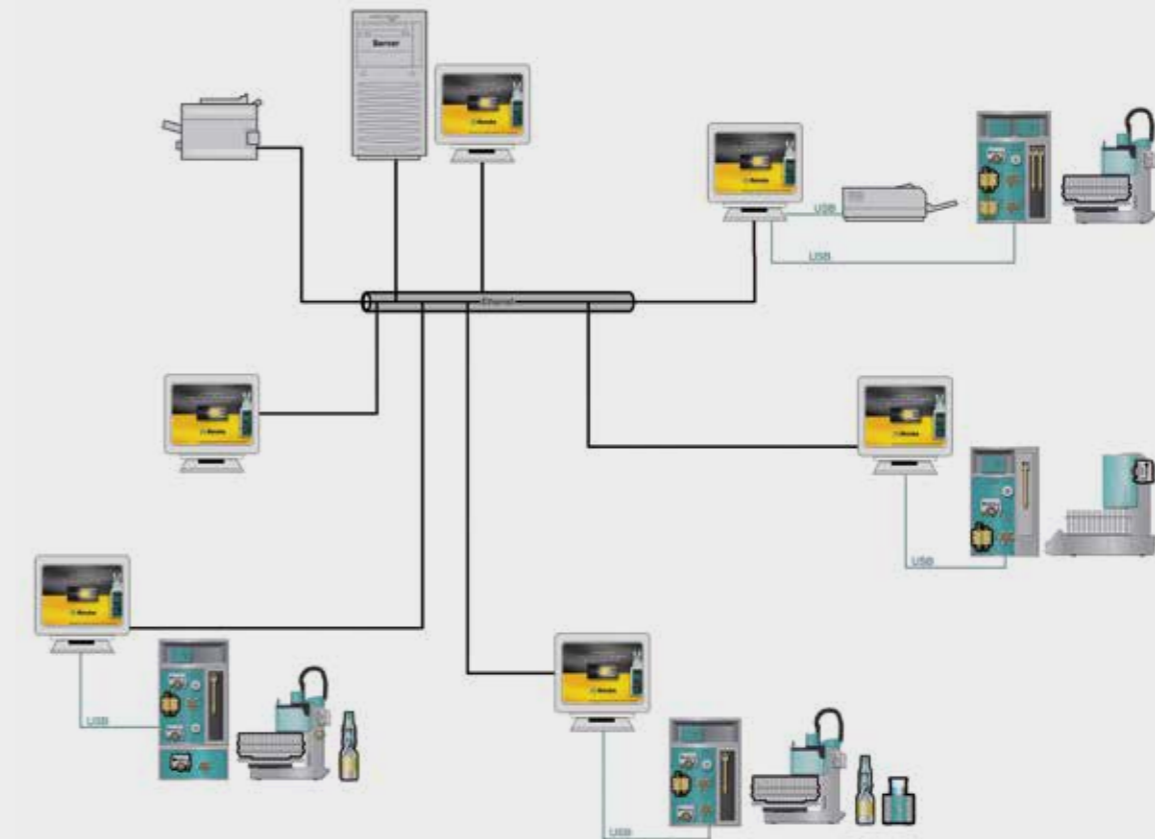- Define the rules for assigning digital signatures and control access to your data

Client/server option: MagIC Net controls four laboratory workplaces and two office workplaces

Versions to match every need

MagIC Net is available in four different versions. Should your requirements change, upgrades are available for the MagIC Net Professional and MagIC Net Compact versions.

MagIC Net Professional

This version supports the entire range of intelligent ion chromatographs and autosamplers from Metrohm. With MagIC Net Professional, all peripheral devices for Inline Sample Preparation and Liquid Handling can be controlled, and other Metrohm instruments or third-party devices can be incorporated.

MagIC Net Multi

MagIC Net Multi is the client-server version of the software. MagIC Net Multi permits installation on three computers. Licenses for additional workplaces are also available. This allows the entire laboratory to be networked, and the analysis results made available at every workplace. All data is managed centrally on the network, all determinations and methods are stored centrally on the server. All clients access the same method pool. MagIC Net Multi and MagIC Net Professional are identical with respect to the number, kind, and functional scope of the instruments that can be integrated.

MagIC Net Compact

This version is the compact version of MagIC Net Professional. The restriction applies only to the number and type of instruments that can be controlled. One Compact IC instrument (930 Compact IC Flex, 881 Compact IC pro, 882 Compact IC plus or 771 Compact IC Interface) with a maximum of one detector and one autosampler can be connected. The full functionality of these instruments, software control, data acquisition and evaluation are available in this version. This version of the MagIC Net software also fulfills all FDA and GLP requirements.

MagIC Net Basic

This version controls the smallest intelligent Metrohm ion chromatographs, the Eco IC and the 863 IC Compact Autosampler. MagIC Net Basic meets the requirements of use in higher education and routine applications enabling particularly safe and easy operation. MagIC Net Basic is available in different languages (English, German, Chinese, Korea, French, Japanese, Russian, etc.) and is included in the scope of delivery of the Eco IC and the Eco IC Package.

Ordering information

Functionality	MagIC Net Professional	MagIC Net Multi	MagIC Net Compact	MagIC Net Basic
Max. number of devices	unlimited	unlimited	max. 1 IC, 1 Autosampler, 1 Detector	2
Supported devices	see [1]	see [1]	see [2]	Eco IC or 883, 863
Workplaces	4	3 x 4 [4]	4	4
Control and monitoring functions	•	•	•	•
Intelligent decisions	•	•	•	•
Requirements of FDA 21 CFR Part 11	•	•	•	
User administration	•	•	•	•
«Audit-Trail»	•	•	•	
Security settings	•	•	•	
Client/Server option		•		
Licenses	1	3 [4]	1	1
Additional licenses		•		
Upgrade available	•		•	
Data export to LIMS	•	•	•	•
Available languages	German, English, Bulgarian, Chinese, Czech, French, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Slovak, Spanish and traditional Chinese			
1)				
Ion chromatographs or interface	940, 930, 850, 881, 882, 883, 771, Eco IC			
Autosampler	919, 889, 863, 858, 814, 815			
Other devices	943, 942, 941, 920, 891, 886, 872, 846, 804, 803, 801, 800, Combustion Module AJ, Remote Box MSB, RS-232 devices			
Detectors	947, 945, 944, 896, 887, 850.9110, 850.9010, 2.850.9020			
2)				
Ion chromatographs or interface	930 or 881 or 882 or 771			
Autosampler	919 or 889 or 863 or 858 or 815 or 814			
Other devices	943, 941, 920, 891, 886, 846, 804, 803, 801, 800, Combustion Module AJ, Remote Box MSB, RS-232 devices			
Detectors	947 or 945 or 944 or 896 or 887 or 850.9110 or 850.9010 or 850.9020			
3)				
The current order numbers can be found on the Metrohm website or on the next page. The license code of MagIC Net Multi version is required for ordering additional licenses!				
4)				
Can be extended to more by adding more licences				

ORDERING INFORMATION

Software	
6.6059.411	MagIC Net 4.1 Compact: 1 licence
6.6059.412	MagIC Net 4.1 Professional: 1licence
6.6059.413	MagIC Net 4.1 Multi: 3 licence
Additional licenses	
6.6059.041	MagIC Net 4.X Multi: 1 additional licences
6.6059.042	MagIC Net 4.x Multi: 5 additional licences
6.6059.043	MagIC Net 4.x Multi: 10 additional licences
Upgrades	
6.6059.393	MagIC Net 2.x/3.x Basic Upgrade to MagIC Net 4.x Basic: 1 licence
6.6059.394	MagIC Net 2.x/3.x Compact Upgrade to MagIC Net 4.x Compact: 1 licence
6.6059.395	MagIC Net 2.x/3.x Professional Upgrade to MagIC Net 4.x Professional: 1 licence
6.6059.399	MagIC Net 2.x/3.x Multi Upgrade to MagIC Net 4.x Multi: 3 licences
6.6059.036	MagIC Net Multi - 1 additional licence: Upgrade from Version 2.x/3.x to Version 4.x
6.6059.037	MagIC Net Multi - 5 additional licences: Upgrade from Version 2.x/3.x to Version 4.x
6.6059.038	MagIC Net Multi - 10 additional licences Upgrade from Version 2.x/3.x to Version 4.x
6.6059.406	MagIC Net 4.X Compact Upgrade to Professional: 1 licence
6.6059.407	MagIC Net 4.X Compact Upgrade to Mulit: 3 licences
6.6059.408	MagIC Net 4.X Professional Upgrade to Multi: 3 licences

SYSTEM REQUIREMENTS

Minimum system requirements	
Operating system	Windows 11 Pro/Enterprise, 64-bit version of: Windows 10 Pro/Enterprise, Windows Server 2022, Windows Server 2019, Windows Server 2016
RAM	8 GB
Free hard disk space	Program: 1 GB Data: 10 GB (Minimum), 50 GB (Recommended)
Connectors	USB connectors for USB devices Serial connectors for RS-232 devices
User rights	The Windows user must have administrator rights to install MagIC Net.
Additional system requirements for MagIC Net server	
Network	10 Mbit/s, stabile and permanent, communication using TCP/IP

For further details check the Installation Instructions

Metrohm means … Spectroscopy!

www.metrohm.com